Art. VI.—*Note on a Tooth of Palorchestes from Beaumaris.*

By T. S. Hall, M.A., and G. B. Pritchard.

[Read 10th June, 1897.]

Some years ago one of us found on the beach at Beaumaris, just below the present hotel, a mammalian tooth which is of some interest. The geology of the locality has been briefly dealt with by us in a previous paper (1., p. 190); but, not feeling sure of the nature of the tooth, we made no reference to it till it had been examined by some one well qualified to give an opinion upon it. As Mr. C. W. De Vis has long been working at our fossil mammals, we sent the tooth to him, and we wish to express our thanks to him for the information which he, as usual, so promptly supplied.

Unfortunately the tooth was not found *in situ*, but loose among the pebbles on the beach floor, so that the precise horizon cannot be definitely asserted. The locality has long been a favourite collecting ground for shark's teeth, which used to occur in great numbers on the beach, but the steady search of numerous visitors has now rendered them scarce, so that instead of getting forty or fifty in an afternoon, a couple may be all that reward a careful search. These teeth seem to have been derived from a thin band about low water level which has yielded many other fish teeth and the remains of *Physetodon baileyana*, M'Coy. The presence of fossil wood in the deposit shows that land was at no great distance at the time when the marine beds were laid down. Below the beach floor the beds are undoubtedly of Eocene age, and those of the cliffs were referred to the same age by Messrs. Tate and Dennant. From this view we dissented, and gave our reasons in the paper above referred to (1). As far as we have been able to discover, no beds of later age occur in the neighbourhood from which the fossil could have come, and its mode of preservation and general appearance is very similar to the tertiary bones found at the same place. Still till further

evidence, in the shape of similar material *in situ*, be obtained the question as to the age of this tooth must remain unsettled, the balance of evidence being in favour of Miocene. The earliest fossil mammal known in Australia was found many years ago in the Eocene Turritella beds of Table Cape, Tasmania. This was referred to by Mr. S. H. Wintle as a "fossil wallaby" (2). Mr. R. M. Johnston has since then spoken of the specimen as *Halmaturus* (3).

Whatever the exact nature of the Tasmanian fossil may be, it is undoubtedly a terrestrial mammal, and as its being *in situ* in the Eocene beds appears certain (4), there is no *a priori* argument against the tooth we are dealing with being as old as Miocene.

As regards the zoological position of the specimen we cannot do better than quote Mr. De Vis' letter.

"The tooth which you are good enough to send me is unquestionably one of the upper premolars of a large diprotodont marsupial. Had it occurred in an ordinary turbary or lacrustine deposit I should have had little hesitation in saying that it was the right permanent upper premolar of the gigantic Kangaroid, *Palorchestes azael*, Ow., the largest of the transition forms between the true kangaroos and the Nototheriidæ. But if it were really derived from a deposit of Meiocene age it would be well nigh impossible for it to belong to *P. azael*, an associate of living mollusks, and it must therefore be provisionally referred to an earlier species of the genus. In either case the tooth is of much interest, whether it leads us eventually to attach to the Nototherian fauna a much higher antiquity than we have hitherto imagined, or whether it merely exemplifies the premolar of *P. azael* in a much younger and more perfect state than the only other tooth hitherto known, which is greatly degraded by wear.

I hope you will be able to fix the real age of the tooth by finding bones of the like origin *in situ*."

Our object in writing this note is to bring before any geologists working in the neighbourhood the desirability of keeping a look out for similar specimens in the Miocene beds, though the marine conditions then prevailing, coupled with the fact that the band yielding the shark's teeth is only reached by digging below high water level, render the chances of finding them somewhat remote.

Literature.

1. *Hall and Pritchard*—"A Contribution to our Knowledge of the Tertiaries in the Neighbourhood of Melbourne." Proc. Roy. Soc. Vic., ix. (N.S.), 1896, pp. 187-229.
2. *Wintle* (*S. H.*)—"The Fossil Mammalian Remains of Tasmania, etc." Victorian Naturalist, iii. (1886), p. 44.
3. *Johnston* (*R. M.*)—"The Geology of Tasmania," p. 261.
4. *Tate* (*Professor Ralph*)—"Unrecorded Genera of the Older Tertiary Fauna of Australia, etc." Journal Roy. Soc. New South Wales, 1893, p. 168.